Dkt. #691-C-PCT(CN)-US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : JIN, et al.

U.S. Serial No.: Not Yet Known, corresponding to

International Application No. PCT/CN03/00431, filed June 3, 2003, which claims priority of U.S. Serial No. 10/291,327, filed November 8, 2002; U.S. Serial No. 60/418,100, filed October 11, 2002; U.S. Serial No. 60/384,971, filed

June 3, 2002

Filed : Herewith

For : HAZARD-FREE MICROENCAPSULATION FOR

STRUCTURALLY DELICATE AGENTS, AN APPLICATION OF STABLE AQUEOUS-AQUEOUS

EMULSION

Law Offices of Albert Wai-Kit Chan, LLC

World Plaza, Suite 604

141-07 20th Avenue

Whitestone, New York 11357

December 2, 2004

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450 Mail-Stop Patent Application

Sir:

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INFORMATION DISCLOSURE STATEMENT

In accordance with their duty of disclosure under 37 C.F.R. §1.56, Applicants would like to direct the Examiner's attention to the following references which are listed below and on Forms PTO/SB/08A and PTO/SB/08B, which are attached hereto as Exhibit A and Exhibits 26 and 28.

1. Patent No. 5,716,644, Zale, S. Ε., Burke, Α., Bernstein, H., Brickner, Α., COMPOSITION for SUSTAINED RELEASE OF NON-AGGREGATED ERYTHROPOIETIN (February 10, 1998).

- 2. PCT Application, WO 96/40071, Neocrin Company, for METHOD FOR THE MANUFACTURE OF MINIMAL VOLUME CAPSULES CONTAINING BIOLOGICAL MATERIAL (1996).
- 3. US Patent Application, U.S. Serial No. 09/886,555, Jin, Tuo, Li Chen, and Hua Zhu, for STABLE POLYMER AQUEOUS/AQUEOUS EMULSION SYLSTEM AND USES THEREOF (2001).
- 4. Langer, R., Folkman, J., "Polymers for the sustained release of proteins and other macromolecules," Nature 263, 797-800 (1976).
- 5. CAS, Results of search on chemical abstracts on the subject of sustained release of proteins based on degradable polymers." (2002).
- 6. Weert, M. v., Hennink, W. E., Jiskoot, W., "Protein instability in poly(lactic-co-glycolic acid) microparticles," Pharm. Res. 17, 1159-1167 (2000).
- 7. Bartus, R. T., Tracy, M.A., Emerich, D.F., Zale, S.E., "Sustained delivery of proteins for novel therapeutic products," Science 281, 1161-1162 (1998).
- 8. Burke, P. A., "Controlled release protein therapeutics: effects of process and formulation on stability," Handbook of pharmaceutical controlled release technology, Marcel Dekker, 661-692 (2000).
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- 10. Johnson, O. L., "The stabilization and encapsulation of human growth hormone into biodegradable microspheres," Pharmaceutical Research 14, 730-735 (1997).
- 11. Cunningham, B. C., Mulkerrin, M. G., Wells, J. A., "Dimerization of human growth hormone by zinc," Science 253, 545-548 (1991).
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 M. J., "Formulation strategies for the stabilization of
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 microspheres," Intern. J. Pharm. 185, 255-266 (1999).
- Schwendeman, S. P., 13. Tobio, M., Jaworowicz, M., Alonso, J., Langer, R., "New strategies for the microencapsulation of tetanus vaccine," J. Microencapsulation 15, 299-318 (1998).
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- 15. Yoshioka, S., Aso, Y., Kojima, S., "Dependence of the molecular mobility and protein stabilitiy of freeze-dried γ-globulin formulations on the molecular weight of dextran," Pharmaceutical Research 14, 736-741 (1997).
- 16. Weert, M. v. d., Hof, R. v., Weerd, J. v. d., Heeren, M.A., Posthuma, G., Hennink, W. E., Crommelin D. J. A., "Lysozyme distribution and conformation in a biodegradable polymer matrix as determined by FTIR techniques," J. Controlled Release 68, 31-40 (2000).

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- 18. Maa, Y.-F., Nguyen, P-A., Hsu, S. W., "Spray-drying of air-liquid interface sensitive recombinant human growth hormone," J. Pharm. Sci., 87, 152-159 (1998).
- 19. Morita, T., Horikiri, Y., Yamahara, H., Suzuki, T., Yoshino, H., "Formation and isolation of spherical fine protein microparticles through lyophilization of protein-poly(ethylene glycol) aqueous mixture," Pharm. Res. 17, 1367-1373 (2000).
- 20. Park, T. G., Lee, H.Y., Nam, Y.S., "A new preparation method for protein loaded poly(D,L-lactic-co-glycolic acid) microspheres and protein release mechanism study,"
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- 21. Franssen, O., Hennink, W. E., "A novel preparation method for polymeric microparticles without the use of organic solvents," Intern. J. Pharm., 168, 1-7 (1998).
- 22. Schwendeman, S. P., Cardamone, M., Brandon, M. R., Klibanov, A., Langer, R., "Stability of proteins and their delivery from biodegradable polymer microspheres," S. C. H. Bernstein, Ed., Microparticulate Systems for the Delivery of Proteins and Vaccines, (Mercel Dekker, New York, 1996), vol. 77, 1-49.

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- 23. Liu, W. R., Langer, R., Klibanov, A. M., "Moisture-induced aggregation of lyophilized proteins in the solid state," Biotech. Bioeng. 37, 177-184 (1991).
- 24. Bittner, B., Morlock, M., Koll, H., Winter, G., Kissel, T., "Recombinant human erythropoietin (rhEPO) loaded poly(lactide-co-glycolide) microspheres: infludence of the encapsulation technique and polymer purity on microsphere characteristics," Eur. J. Pharm. Biopharm. 45, 295-305 (1998).
- 25. Takahata, H., Lavelle, E.C., Coombes, A.G.A., Davis, S.S., "The distribution of protein associated with poly(DL-lactide co-glycolide) microparticles and its degradation in simulated body fluids," J. Controlled Release 50, 237-246 (1998).
- 26. PCT International Search Report for JIN, et al, Int'l
 Application No. PCT/CN/00431, Filed June 3, 2003, Dated
 August 1, 2003. [Exhibit 26]
- 27. C.N. Patent No. 1054009A for Takeda Chemical Ind., Ltd., August 28, 1991. "PROLONGED RELEASE MICROCAPSULES."
- 28. WO 00/41,682 A, for LG Chemical, Ltd.; "LIPOPHILIC MICROPARTICLES CONTAINING A PROTEIN DRUG OR ANTIGEN AND FORMULATION COMPRISING SAME" Published July 2, 2000. [Exhibit 28]
- 29. A. Berthold et al., "Preparation and Characterization of Chitosan Microspheres as Drug Carrier for Prednisolone Sodium Phosphate as Model for Antiflammatory Drugs", Journal of Controlled Release, 1996,39, 17-25.

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References 1-25 of the above-identified twenty nine (29) references were submitted as prior art to the United States Patent and Trademark Office on November 8, 2002 for U.S. Serial No. 10/291,327, filed November 8, 2002. Also, reference twenty nine (29) was cited in the March 9, 2004 Office Action for U.S. Serial No. 10/291,327. Accordingly, Applicants will not provide these documents unless otherwise requested by the Examiner. Reference twenty seven (27) will be sent to the Examiner by Express Mail.

If a telephone interview would be of assistance in advancing prosecution of the subject application, Applicants' undersigned attorney invites the Examiner to telephone him at the number provided below.

No fee is deemed necessary in connection with the filing of this Communication. However, if any additional fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 50-1891.

Respectfully submitted,

albert Wai Kit Che

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Sheet 1

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

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Application Number Not Yet Known Filing Date Herewith First Named Inventor JIN, Tuo Art Unit Not Yet Known **Examiner Name** Not Yet Known Attorney Docket Number 691-C-PCT(CN)-US

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Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ^{2 (# known)}	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	^{US-} 5,716,644	02-10-1998	Zale, et al.	
	3	^{US-} 09/886,555	06-21-2001	JIN, et al.	
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_	2	WO 96/40071	12-19-1996	Neocrin Company		T
	27	CN1054009A	08-28-1991	Takeda Chemical Ind., Ltd.		T
	28	WO 0/041,682 A	07-02-2000	LG Chemical, Ltd.		L
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Examiner	Cite	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of	Ι.
Initials*	No.1	the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	4	Langer, R., Folkman, J., "Polymers for the sustained release of proteins and other macromolecules," Nature 263, 797-800 (1976).	
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